

# Claims

- [c1] What is claimed is:
1. A liquid crystal display panel comprising:
    - a first substrate;
    - a second substrate having an active region;
    - a sealant positioned on the second substrate and surrounding the active region for adhering the second substrate to the first substrate;
    - a spacer wall positioned on the second substrate and between the sealant and the active region, the spacer wall having at least one liquid crystal injected opening and at least one spacer block positioned near the liquid crystal injected opening; and
    - a liquid crystal layer positioned between the first substrate, the second substrate, and the sealant.
  - [c2] 2. The liquid crystal display panel of claim 1 wherein the second substrate further comprises a peripheral region surrounding the active region and a thin film layer located on the peripheral region where both the sealant and the spacer wall are located.
  - [c3] 3. The liquid crystal display panel of claim 2 wherein the thin film layer is an anti-reflective layer.

- [c4] 4.The liquid crystal display panel of claim 2 wherein the thin film layer is a first alignment layer.
- [c5] 5.The liquid crystal display panel of claim 4 further comprising:  
a second alignment layer positioned on the first substrate and opposite to the first alignment layer, wherein the first alignment layer and the second alignment layer are both vertical alignment (VA) layers.
- [c6] 6.A liquid crystal display panel comprising:  
a first substrate;  
a second substrate having an active region, a peripheral region surrounding the active region, and a thin film layer located on the peripheral region;  
a sealant positioned on the peripheral region of the second substrate and surrounding the active region for adhering the second substrate to the first substrate;  
a spacer wall positioned on the peripheral region of the second substrate and between the sealant and the active region; and  
a liquid crystal layer positioned between the first substrate, the second substrate, and the sealant.
- [c7] 7.The liquid crystal display panel of claim 6 wherein the thin film layer is an anti-reflective layer.

- [c8] 8.The liquid crystal display panel of claim 6 wherein the thin film layer is a first alignment layer.
- [c9] 9.The liquid crystal display panel of claim 8 further comprising:  
a second alignment layer positioned on the first substrate and opposite to the first alignment layer, wherein the first alignment layer and the second alignment layer are both vertical alignment layers.
- [c10] 10.The liquid crystal display panel of claim 6 wherein the spacer wall comprises at least one liquid crystal injected opening for allowing liquid crystal molecules to be injected into space between the first substrate and the second substrate.
- [c11] 11.A liquid crystal display panel comprising:  
a first substrate;  
a second substrate having an active region located on a central portion of the second substrate;  
a thin film layer positioned on the second substrate and surrounding the active region;  
a sealant positioned on the thin film layer for adhering the second substrate to the first substrate; and  
a liquid crystal layer positioned between the first substrate, the second substrate, and the sealant.

- [c12] 12.The liquid crystal display panel of claim 11 wherein the thin film layer is an anti-reflective layer.
- [c13] 13.The liquid crystal display panel of claim 11 wherein the thin film layer is a first alignment layer.
- [c14] 14.The liquid crystal display panel of claim 13 further comprising:  
a second alignment layer positioned on the first substrate and opposite to the first alignment layer, wherein the first alignment layer and the second alignment layer are both vertical alignment layers.
- [c15] 15.A liquid crystal on silicon (LCOS) display panel comprising:  
a first substrate;  
a second substrate having an active region;  
a sealant positioned on the second substrate and surrounding the active region for adhering the second substrate to the first substrate;  
a spacer wall positioned on the second substrate and between the sealant and the active region; and  
a liquid crystal layer positioned between the first substrate, the second substrate, and the sealant.
- [c16] 16.The liquid crystal on silicon display panel of claim 15 wherein the second substrate further comprises a pe-

ripheral region surrounding the active region and a thin film layer located on the peripheral region where both the sealant and the spacer wall are located.

[c17] 17.The liquid crystal on silicon display panel of claim 16 wherein the thin film layer is an anti-reflective layer.

[c18] 18.The liquid crystal on silicon display panel of claim 16 wherein the thin film layer is a first alignment layer.

[c19] 19.The liquid crystal on silicon display panel of claim 18 further comprising:  
a second alignment layer positioned on the first substrate and opposite to the first alignment layer, wherein the first alignment layer and the second alignment layer are both vertical alignment layers.

[c20] 20.The liquid crystal on silicon display panel of claim 15 wherein the spacer wall comprises at least one liquid crystal injected opening for allowing liquid crystal molecules to be injected into space between the first substrate and the second substrate.

[c21] 21.The liquid crystal on silicon display panel of claim 20 wherein the spacer wall further comprises at least one spacer block positioned near the liquid crystal injected opening.